

What Is Claimed Is:

1. A fuel tank welding joint for connecting a fuel tank to a prescribed member, the fuel tank welding joint comprising:

5 a joint main body including (i) a welded edge portion that is configured to be thermally welded to a wall of the fuel tank and (ii) a tube portion for connecting a hose, the tube portion having a connecting passage to connect an interior of the fuel tank and the prescribed member; and

a barrier layer formed on a surface of the joint main body,

10 wherein the joint main body is made of a first resin material that is weldable to a wall of the fuel tank, and

the barrier layer is made of a second resin material that is adhesively and chemically reactive with the first resin material and that is more fuel-impermeable than the first resin material, the barrier layer having an end
15 portion formed so as to extend past an end of the tube portion.

2. The fuel tank welding joint according to Claim 1, wherein the barrier layer is formed on the surface of the joint main body along the connecting passage.

20 3. The fuel tank welding joint according to Claim 2, wherein the end portion comprises a hose catch for holding the hose, the hose catch having a greater diameter than an outer circumference of the end of the tube portion.

4. The fuel tank welding joint according to Claim 3, wherein the barrier layer comprises an umbrella-shaped portion that engages with the joint main body.

5. The fuel tank welding joint according to Claim 1, wherein the first resin material is a modified olefinic resin containing a polar functional group and the second resin material is selected from the group of polyamide and polyacetal.

6. A method for manufacturing a fuel tank welding joint for connecting a fuel tank to a prescribed member, the method comprising:

a first step of forming a joint main body made of a first resin material that is configured to be welded to a wall of the fuel tank, the joint main body including (i) a welded edge portion to be thermally welded to the wall of the fuel tank and (ii) a tube portion for connecting a hose, the tube portion having a connecting passage to connect an interior of the fuel tank and the prescribed member; and

a second step of forming a barrier layer by injecting a second resin material into a cavity of a mold unit in which the joint main body has been set, the second resin material being adhesively and chemically reactive with the first resin material and more fuel-impermeable than the first resin material,

wherein the second step comprises a step of allowing the second resin material to flow through an end of the tube portion into the cavity, so as to form an end portion.

7. The method for manufacturing a fuel tank welding joint according to Claim 6, wherein the barrier layer is formed on a surface of the joint main body along the connecting passage.

5 8. The method for manufacturing a fuel tank welding joint according to Claim 7, wherein the end portion comprises a hose catch for holding the hose, the hose catch having a greater diameter than an outer circumference of the end of the tube portion.

10 9. The method for manufacturing a fuel tank welding joint according to Claim 8, wherein the barrier layer comprises an umbrella-shaped portion that engages with the joint main body.

15 10. The method for manufacturing a fuel tank welding joint according to Claim 6, wherein the first resin material is a modified olefinic resin containing a polar functional group and the second resin material is selected from the group of polyamide and polyacetal.

20 11. The method for manufacturing a fuel tank welding joint according to Claim 6, wherein the mold unit comprises a split mold including a first mold and second mold; and

the joint main body comprises a burr cutting edge, the burr cutting being disposed upstream from the welded edge portion in a route through which the second resin material passes, the burr cutting edge being pressed
25 to a part of the second mold by the clamping pressure from the first mold, thereby defining the cavity.

12. A fuel cut-off valve that opens and closes a connecting passage, which connects a fuel tank to a prescribed member, according to a level of fuel in the fuel tank, the fuel cut-off valve comprising:

5 a lid including (i) a lid main body with the connecting passage, (ii) a welded edge portion to be thermally welded to a wall of the fuel tank and (iii) a barrier layer formed on a surface of the lid main body;

a case main body which is mounted on the lid, the casing main body having a valve chamber connected to the connecting passage; and

10 a float which is accommodated in the valve chamber, the float rising and falling according to a level of fuel in the fuel tank,

wherein the lid main body is made of a first resin material that is weldable to a wall of the fuel tank, and

the barrier layer is made of a second resin material that is adhesively
15 and chemically reactive with the first resin material and that is more fuel-impermeable than the first resin material, the barrier layer having an end portion formed so as to extend past an end of the lid.

13. The fuel cut-off valve according to Claim 12, wherein the barrier
20 layer is formed on the surface of the lid main body along the connecting passage.

14. The a fuel cut-off valve according to Claim 13, wherein the end
portion comprises a hose catch for holding the hose, the hose catch having a
25 greater diameter than an outer circumference of the end of a tube portion of the lid main body.

15. A method for manufacturing a fuel cut-off valve that opens and closes a connecting passage, which connects a fuel tank to a prescribed member, according to a level of fuel in the fuel tank, the method comprising:

5 a first step of forming a lid made of a first resin material that is configured to be thermally welded to a wall of the fuel tank, the lid including (i) a lid main body with the connecting passage, (ii) a welded edge portion to be thermal weldable to a wall of the fuel tank and (iii) a barrier layer formed on a surface of the lid main body;

10 a second step of forming a barrier layer by injecting a second resin material into a cavity of a mold unit in which the lid main body has been set, the second resin material being adhesively and chemically reactive with the first resin material and more fuel-impermeable than the first resin material,

15 wherein the second step comprises a step of allowing the second resin material to flow through an end of the lid main body into the cavity, so as to form an end portion.

16. The method for manufacturing a fuel cut-off valve according to Claim 15, wherein the barrier layer is formed on a surface of the lid main
20 body along the connecting passage.

17. The method for manufacturing a fuel cut-off valve according to Claim 16, wherein the end portion comprises a hose catch for holding the hose, the hose catch having a greater diameter than an outer circumference
25 of the end of a tube portion of the lid main body.

18. The method for manufacturing a fuel cut-off valve according to Claim 17, wherein the barrier layer comprises an umbrella-shaped portion that engages with the lid main body.

5 19. The method for manufacturing a fuel cut-off valve according to Claim 15, wherein the first resin material is a modified olefinic resin containing a polar functional group and the second resin material is selected from the group of polyamide and polyacetal.

10 20. The method for manufacturing a fuel cut-off valve according to Claim 15, wherein the mold unit comprises a split mold including a first mold and second mold; and

the lid main body comprises a burr cutting edge, the burr cutting being disposed upstream from the welded end in a route through which the resin
15 material passes, the burr cutting edge being pressed to a part of the second mold by the clamping pressure from the first mold, thereby defining the cavity to form the end portion.